Systematic Review Tools

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Session Outline

- Systematic Review Overview
- Tools for each steps of the systematic review process

Objectives

By the end of this session, you will be able to:

- Identify three systematic review tools
- Access two (freely available or from UNMC) tools to use with your systematic review

What is a Systematic Review?

"attempts to collate all empirical evidence that fits pre-specified eligibility criteria in order to answer a specific research question"

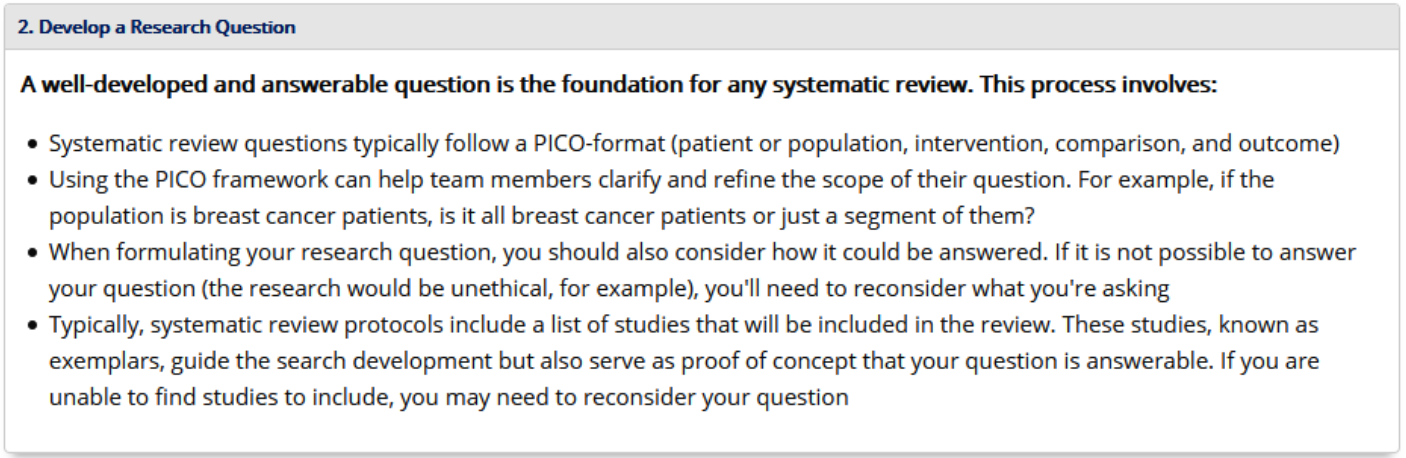
Higgins JPT, Green S (editors). *Cochrane Handbook for Systematic Reviews of Interventions* Version 5.1.0 [updated March 2011]. The Cochrane Collaboration, 2011. Available from handbook.cochrane.org

Characteristics of Systematic Review

- Clearly stated set of objectives
- Explicit, reproducible methodology
- Attempts to identify all studies that meets eligibility criteria
- Assessment on validity of findings of included studies
- Systematic presentation and synthesis of characteristics of findings of included studies

Higgins JPT, Green S (editors). *Cochrane Handbook for Systematic Reviews of Interventions* Version 5.1.0 [updated March 2011]. The Cochrane Collaboration, 2011. Available from handbook.cochrane.org

Question Frameworks



2. Develop a Research Question

A well-developed and answerable question is the foundation for any systematic review. This process involves:

- Systematic review questions typically follow a PICO-format (patient or population, intervention, comparison, and outcome)
- Using the PICO framework can help team members clarify and refine the scope of their question. For example, if the population is breast cancer patients, is it all breast cancer patients or just a segment of them?
- When formulating your research question, you should also consider how it could be answered. If it is not possible to answer your question (the research would be unethical, for example), you'll need to reconsider what you're asking
- Typically, systematic review protocols include a list of studies that will be included in the review. These studies, known as exemplars, guide the search development but also serve as proof of concept that your question is answerable. If you are unable to find studies to include, you may need to reconsider your question

- PICO (Patient, Intervention, Comparison, Outcome)
- SPIDER (Sample, Phenomenon of Interest, Design, Evaluation, Research type)
- SPICE (Setting, Perspective, Intervention, Comparison, Evaluation)
- ECLIPSE (Expectation, Client group, Location, Impact, Professionals, Service)

https://guides.mclibrary.duke.edu/sysreview/question

PICO(TT)(S) Framework

- Patient, population, problem
- Intervention
- Comparison
- Outcome
- (Timeframe)
- (Type of study)
- (Setting)

In school-aged children, what is the effect of at-school dental clinic visits on a reduction of dental caries compared with no at-school dental clinic visits?

https://unmc.libguides.com/ebm/ask

Previously known as "What Review is Right for You?"

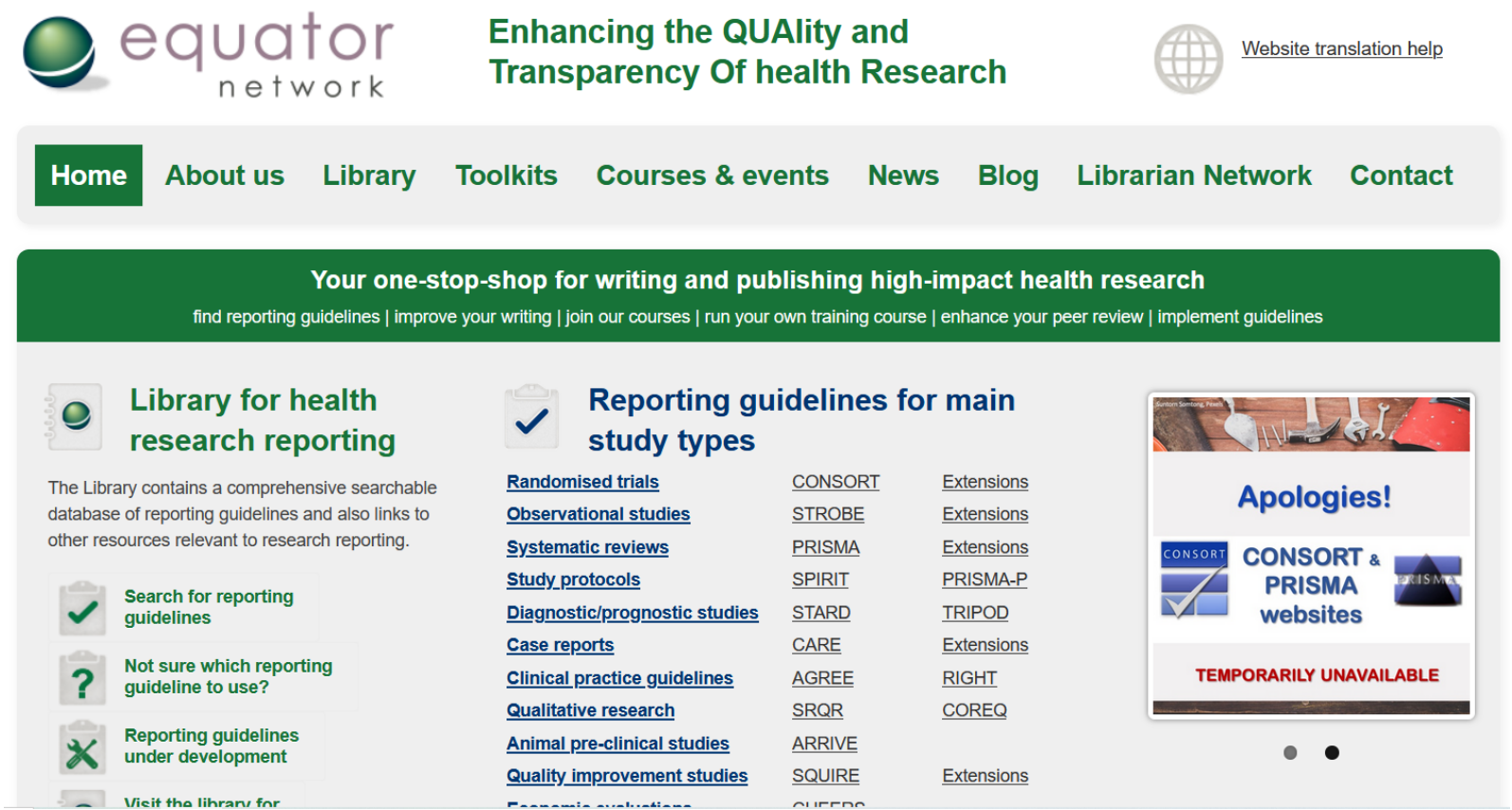
This tool is designed to provide guidance and supporting material to reviewers on methods for the conduct and reporting of knowledge synthesis.

Select the type of review:

Quantitative | Qualitative

https://whatreviewisrightforyou.knowledgetranslation.net/

Equator Network



https://www.equator-network.org/

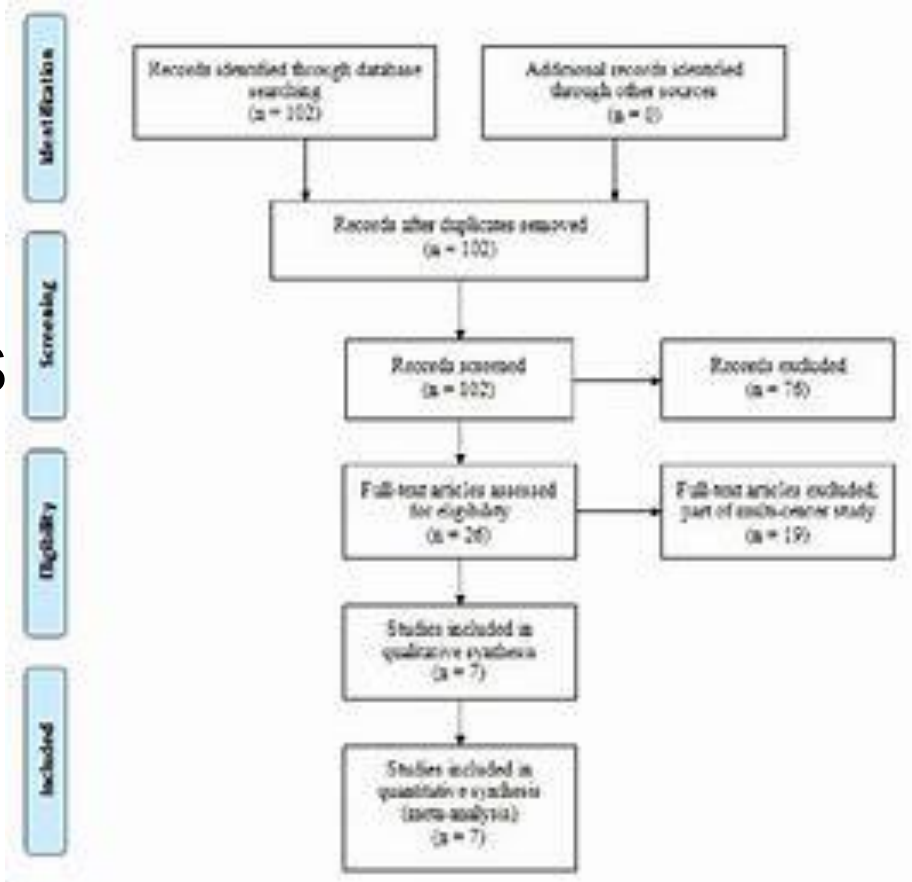
Protocols

Why create a Protocol?

- 1st thing your team completes
  - "Blueprint" of your systematic review
  - Describes rationale, hypothesis, and planned methods for review
  - Prepared before beginning systematic review
  - Protocols made publicly and registered

PRISMA

- Rationale and objectives
- Eligibility criteria
- Information sources
- Draft on a search strategy
- Data management
- Outcomes and prioritization
- Data synthesis



https://www.equator-network.org/reporting-guidelines/prisma/

Systematic Review Registries

- Prospero
  - International prospective register of systematic reviews
  - Review protocol recorded and maintained
  - Reviews available on open access database
  - Transparency in review process
- Open Science Framework (use the pre-registration template)

PROSPERO

To register a systematic review a member of the review team completes an online registration. To do this they must have signed up for and be logged in to a PROSPERO account. They enter key information about the review design and methods along with information about the review team, funder and timelines.

A PROSPERO record is not considered a full protocol. A PDF of the full protocol may be uploaded as part of the registration record.

During the registration process, the PROSPERO system uses the information provided to identify any similar reviews that have previously been registered. If similar reviews are found, and the person registering the current review decides to continue with their registration, they are asked to provide the reasons why their new review is needed (although this is not mandatory). The reasons provided (including none) become part of the registration record.

The PROSPERO system carries out some automated checking when data are entered to each field and may require additional information to be supplied. When data entry is complete, a named guarantor (usually the senior member of the review team) must approve the content of the record. All named review team members must confirm their participation and consent to their name and email being published in the publicly available PROSPERO record. Once these confirmations are completed a registration number is assigned and the registration record is published immediately on the PROSPERO site. There is no delay to publication.

The content of the record may be amended after registration if changes become necessary. A dated audit trail of amendments is stored and becomes part of the registration record. Prior versions are also retained and remain publicly available.

The review team is asked to update the registration record when the review is completed and to include citation details when it is published. Automated emails are sent out as reminders to do this.

PROSPERO does not check record content (beyond built-in automatic checks) and does not provide peer review. PROSPERO does not endorse content. A PROSPERO record is not a formal publication.

NIHR | National Institute for Health and Care Research

PROSPERO
International prospective register of systematic reviews

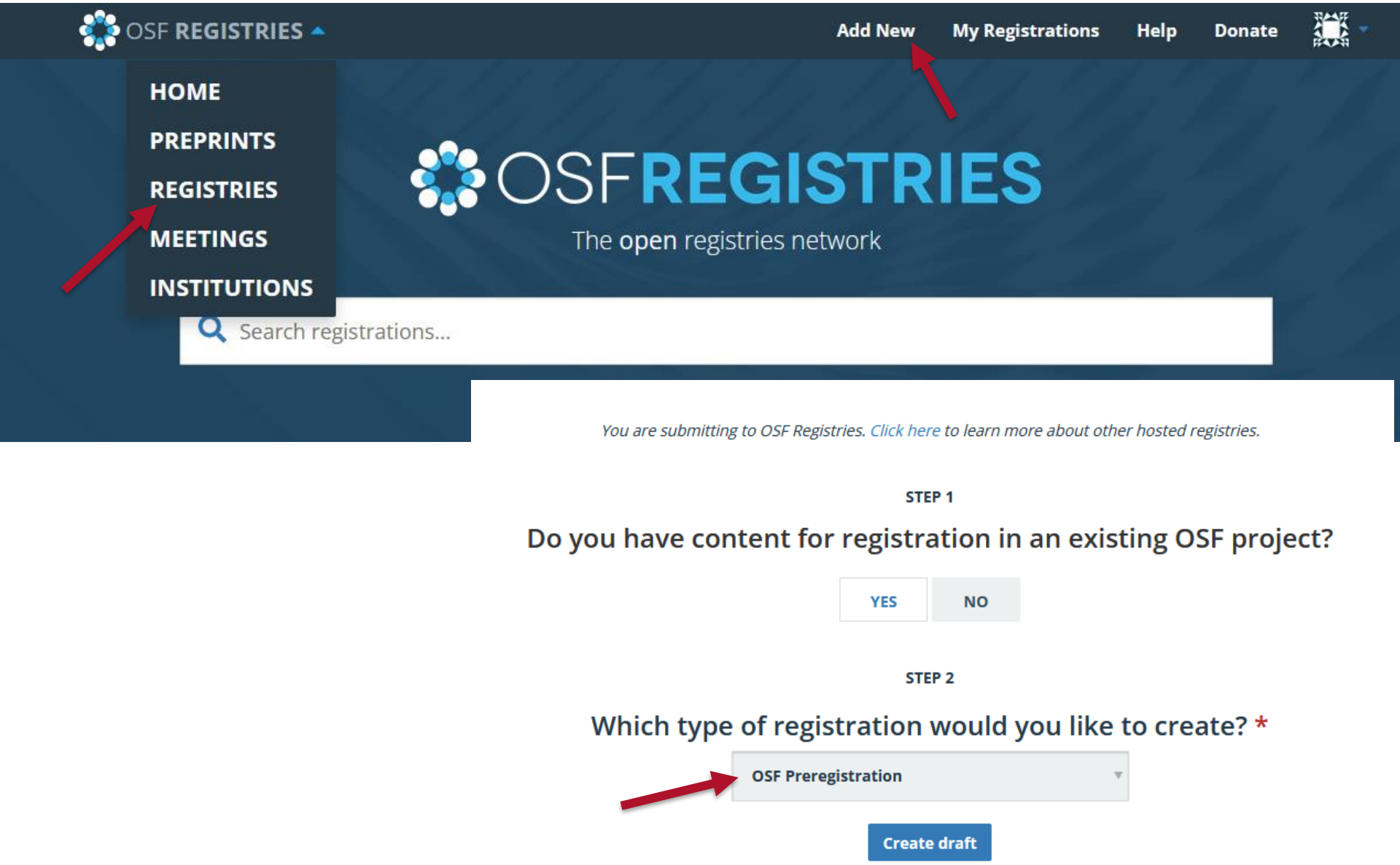
United States health inequities in disaster health planning and response

Sara Donovan, Abigail Lowe, David Brett-Major, Claire Figi, Danielle Westmark, Shelly Schwedhelm, James Lawler, Nellie Darling, Laura Podewils, Nancy Wittmer

Citation 1 change

Sara Donovan, Abigail Lowe, David Brett-Major, Claire Figi, Danielle Westmark, Shelly Schwedhelm, James Lawler, Nellie Darling, Laura Podewils, Nancy Wittmer. United States health inequities in disaster health planning and response. PROSPERO 2024 Available from https://www.crd.york.ac.uk/PROSPERO/view/CRD42022363610

Open Science Framework



Searching

Systematic Review Toolbox

Navigation

Go to

- ○ Quick Search
- ◉ Advanced Search
- ○ About

Advanced Search

Tool Type

Software

Review Family

Systematic ×

Review Stage

Screen ×

Search

Advanced Search

Tool Type

Software

Review Family

Systematic ×

Review Stage

Screen ×

Search

Number of results: 45

Name: Abstrackr

Summary: An online tool for the task of citation screening for systematic reviews.

URL: Link

Review Families: Systematic, Rapid, Scoping, Mapping, Mixed Method

Review Stages: Screen

Name: AntConc

Summary: A freeware corpus analysis toolkit for concordancing and text analysis.

Systematic Review LibGuide

Resources & Tools for conducting an exhaustive literature search

https://unmc.libguides.com/systematicreview

PRESS

Peer Review of Electronic Search Strategies

McGowan J, Sampson M, Salzwedel DM, Cogo E, Foerster V, Lefebvre C. PRESS Peer Review of Electronic Search Strategies: 2015 guideline statement. J Clin Epidemiol. 2016 Jul;75:40-6. http://www.sciencedirect.com/science/article/pii/S0895435616000585

PRESS

- Evidence-based checklist
  - Boolean/Proximity operators
  - Appropriate subject headings/keywords
  - Database limiters
- Methods section of paper
- Quality and comprehensiveness of search

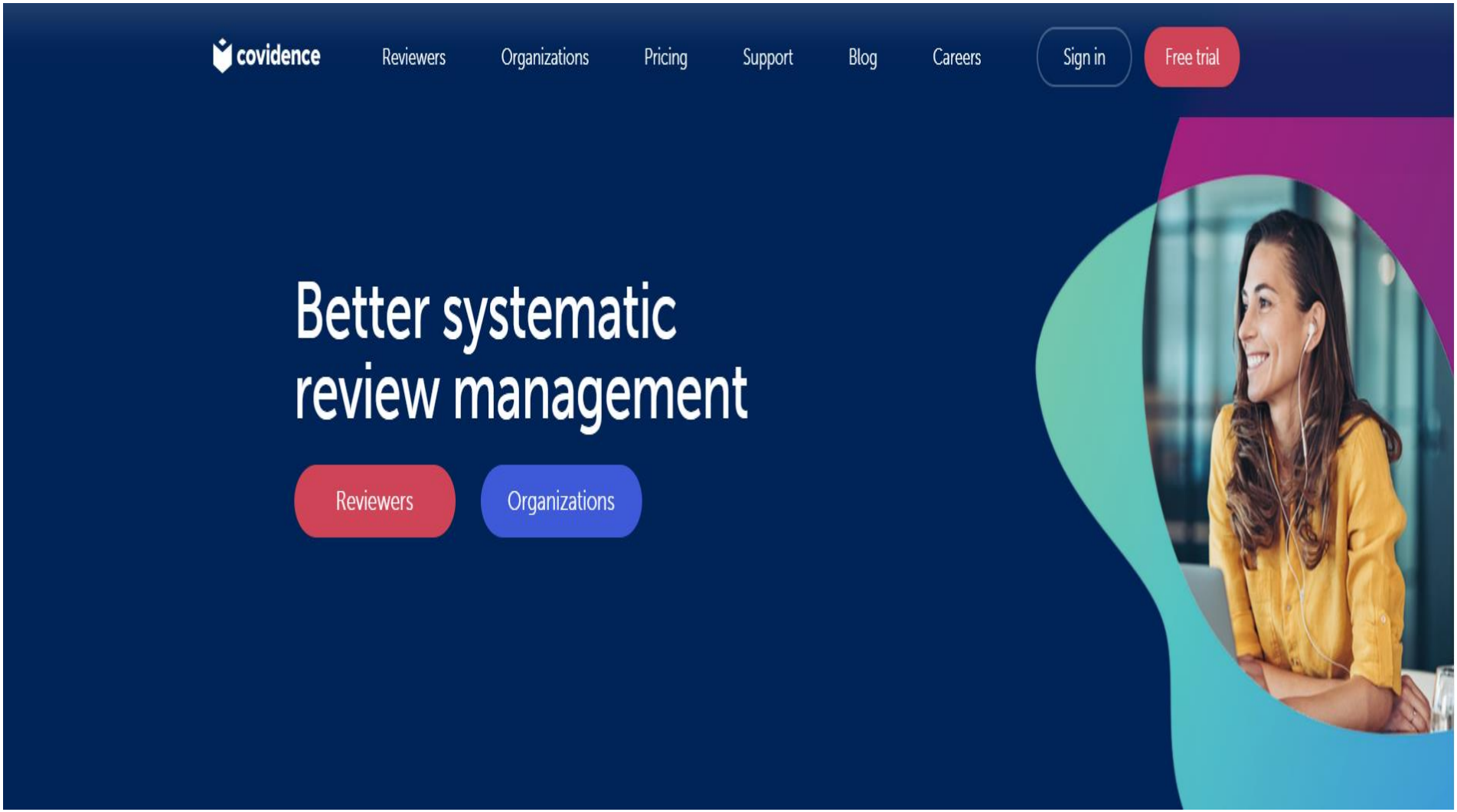
Screening Tools

Screening Tools

- Streamlines systematic reviews
- Import citations
- Screen titles/abstracts
- Upload references
- Screen full text
- Data extraction
- Risk of bias
- Export

https://unmc.libguides.com/systematicreview/tools

Covidence


covidence
Reviewers
Organizations
Pricing
Support
Blog
Careers
Sign in
Free trial
Better systematic review management
Reviewers
Organizations

Review Summary

Settings | PRISMA | Export

Import references

3 total duplicates removed

Import

Title and abstract screening

6 irrelevant

1037 studies to screen

TEAM PROGRESS

9 DONE

0 CONFLICTS

13 ONE VOTE

1024 NO VOTES

Team settings

KIARA,
YOU CAN STILL

SCREEN

1037

Continue

You've screened **0** studies so far

Full text review

0 excluded

3 studies to screen

Extraction

0 extracted

0 studies to extract

Rayyan

- Up to 3 active reviews
- Unlimited reviewers
- De-duplication
- Filtration facets
- Mobile app
- Standard support

Showing 24 / 25 Undecided Articles

PICO | Blind On | Ratings | Samples | Add PDF | ... | Criteria | Filters

Undecided | Sort

1 In-Hospital Outcomes of Chronic Total Oc...
Date: 2023-01-01
Albaeni, A.; Chatila, K. F.; Thakker, R. A.; K...

2 Low-dose spinal block combined with epi...
Date: 2022-01-01
Almeida, C. R.; Vieira, L. S.; Cunha, P.; Go...

3 Clinical Importance of Myocardial T2 Ma...
Date: 2021-01-01
Amano, Y.; Omori, Y.; Ando, C.; Yanagisaw...

4 Successful Treatment of Steroid-Refract...
Date: 2021-01-01
Barry, T.; Gallen, R.; Freeman, C.; Agasthi, ...

5 Stress Urinary Incontinence: Slings, Singl...
Date: 2021-01-01
Caldwell, L.; White, A. B.

Meta-analysis of retrospective studies su...

1mins | 1 Sessions

In-Hospital Outcomes of Chronic Total Occlusion Percutaneous Coronary Interventions in Heart failure patients

Abstract:

In-hospital outcomes of chronic total occlusion Percutaneous Coronary Interventions (CTO PCI) in heart failure patients has not been evaluated on a national base and was the focus of this investigation. We used the Nationwide Inpatient Sample database from 2008 to 2014 to identify adults with single vessel CTO PCI for stable ischemic heart disease (SIHD). Patients were divided into 3 groups: patients without heart failure, heart failure with reduced ejection fraction (HFrEF) and heart failure with preserved ejection fraction (HFpEF). Clinical characteristics and in-hospital outcomes were studied using relevant statistics. Multiple logistic regression models were performed to assess in-hospital mortality, acute renal failure, and the use of mechanical support devices. Of 112,061 inpatients with SIHD from 2008 to 2014 undergoing CTO PCI, 21,185 (19%) had HFrEF and 3309 (3%) had HFpEF. Compared to patients without heart failure, HFrEF and HFpEF patients were older (mean age 69.2 vs 66.3, 70.3 vs 66.3 respectively, P < 0.001), had more comorbidities and higher acute in-hospital complications. HFrEF patients had higher adjusted in-hospital mortality AOR 1.73, 95% CI (1.21-2.48)], acute renal failure AOR 2.68, 95% CI (2.34-3.06)], and need for mechanical support AOR 2.76, 95% CI (2.17-3.51)]. Compared to patients without heart failure, HFpEF patients had similar mortality and need

✓ Include | ? Maybe | X Exclude | Exclude with Rea... | Start typing to ad...

Add note

Filters

Keywords for include

Select All

randomized	2
RCT	1
placebo	1
compared with	1
CCT	0
trial	0
randomly	0
crossover	0
cross over	0
randomised	0

Show more >

Keywords for exclude

Select All

Chat with ResearchPilot™ Beta

Other SR project management tools

Citation Tools

Citation Managers

EndNote Research Guide:
http://unmc.libguides.com/endnote

Zotero Research Guide: https://unmc.libguides.com/zotero

- Create Folders to Organize Key Articles/Findings
- Removes duplicates
- Use the note field to keep track of research notes
- Allows for highlighting and marking attached PDF's
- Export citations to Microsoft Excel
- Create work cited bibliographies

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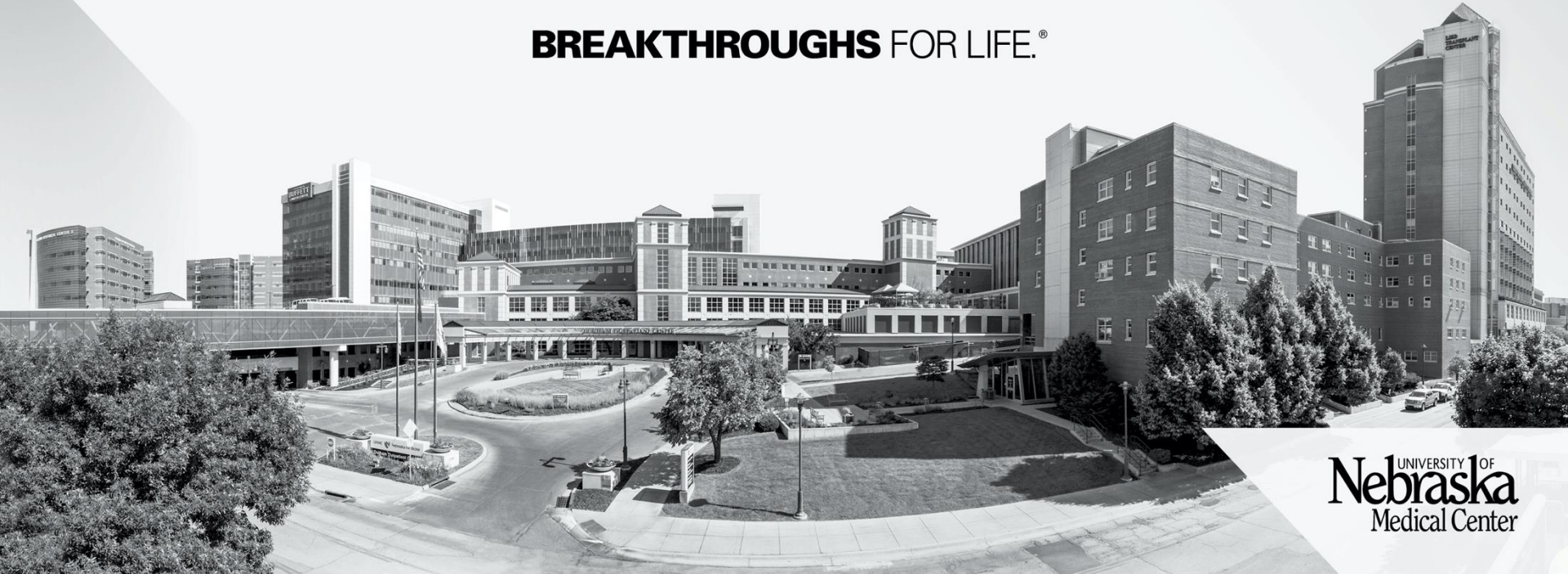

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